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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/538,259	12/13/2005	Uwe Zimmermann	10191/3700	3297

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EXAMINER	
ROGERS, DAVID A	
ART UNIT	**PAPER NUMBER**
2856	

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05/25/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/538,259	ZIMMERMANN ET AL.	
	Examiner	Art Unit	
	David A. Rogers	2856	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 April 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *8-19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *8-17* is/are rejected.

7)☒ Claim(s) *18 and 19* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *02 April 2007* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *12/11/06*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 U.S.C. § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 8 and 9 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by the applicant's admitted prior art.

With reference to the applicant's figure 1 there is shown a vehicle (reference item 1) having mounted sensors (reference items S1, S2, and S3). The three sensors transmit sensing signals through individual sensing ranges (reference items ES1, ES2, and ES3). As clearly shown the ranges for the first sensor (S1) and the third sensor (S3) are substantially coincident; i.e., they the same direction. The second sensor (S2) is shown in figure 1 having a sensing range (ES2) that overlaps only partially with the other sensing ranges (ES1, ES3).

It is considered inherent that, when the sensing system is working properly, an *actual object* located in the center lane (reference item 10.2) and within the sensing range (ES2) of the second sensor (S2) would also be detected by the first sensor (S1) and the third sensor (S3) since there is an overlap of the

sensing ranges. A properly functioning sensing system should clearly determine that such an object is relevant.

Claim Rejections - 35 U.S.C. § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 11-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over the admitted prior art as applied to claim 9 and further in view of United States Patent 6,055,042 Sarangapani and United States Patent 6,853,908 to Andersson *et al.*

The admitted prior art teaches an object detection system having a plurality of sensors. The admitted prior art does not teach sensors whose sensing angles are configured to be changeable.

Sarangapani discloses a method and apparatus for detecting objects. The apparatus comprises at least three sensors, at least two of which are near-field sensors having near-field scanning range (reference item 408) and at least one of which is a far-field sensor with a far-field scanning range (reference item 406). As seen in figures 4 and 5 the far-field scanning range overlaps only partially with the near-field scanning ranges. Data from the near- and far-field sensors are used to determine the location, size, and orientation of an object.

Data from the sensors are weighted. Therefore, the determined relevance of an object is based on at least two or even three sensors. Sarangapani teaches a vehicle-based object detecting system as generally seen in figure 4. It is described and shown figures 3 and 4 that it is desired to exclude from the third sensor (having sensing range shown as reference item 306 or 406) that anything outside of the width of the road; i.e., traveling lane, should be excluded.

Andersson *et al.* teaches a vehicle-based object detection system. The object detection devices include radar, laser, and cameras. Furthermore, Andersson *et al.* teaches that cameras, for example, can be zoomed in order to obtain a useful image. The zooming of a camera increases or decreases the maximum scanning angle (depending on if the camera is being zoomed closer or farther away from an area). Also, Andersson *et al.* teaches

> For example, if the on-board map database information indicates that the vehicle is approaching a curve, the attention plan could be generated for adjusting for example the direction and scanning area of the relevant detection devices so as to follow the curvature of the road. Also, an upcoming vertical variation of the road such as a hill or drop in the road could result in vertical adjustment of the detection devices. *A change in width of the road might also induce a change in the desired scanning area of the devices, as controlled by the attention plan*. Further, if the road is changing to be a divided road with a median, the attention of the detection devices could be concentrated to the vehicle's side of the median, since vehicles on the other side of the median are not likely to be collision risks.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of the admitted prior art with the

teachings of Sarangapani and Andersson *et al.* in order to provide a sensor whose sensing angle is changeable. Doing so would allow the sensor to be adapted in order to ensure that extraneous objects outside of the road can be eliminated from detection.

With regard to claims 13 and 16 the changing of the sensing angle would more than likely be done automatically since the vehicle is moving. However, manually changing the sensing angle would have been obvious if, for example, it is known *a priori* that the vehicle of Sarangapani was going to be used in a different road than previously traveled.

With regard to claims 14 and 17 Andersson *et al.* teaches that the system utilizes a map database. Furthermore, Andersson *et al.* states:

> According to the invention, the above object is achieved by a system comprising a computing device using information regarding the current or upcoming road situation from a map database as input for computing an attention plan for optimising the use of the at least one detection device in the object detection system, said attention plan being outputted to the object detection system for control of said detection device.
>
> The map database could provide road section attributes relevant for the control of the operating device. Attributes describing, for example, road geometry (curves and vertical curvature), lanes, intersection geometry, road signs etc are used for assessments of which traffic environment objects are most likely to appear

Clearly from Andersson *et al.* the map database is analogous to a "navigation system" and that changes in sensor angle to accommodate road changes would be based on this "navigation system."

Allowable Subject Matter

5. Claims 18 and 19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

6. Applicant's arguments with respect to claims 8-19 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a). A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to David A. Rogers whose telephone number is (571) 272-2205. The examiner can normally be reached on Monday - Friday (0730 - 1600). If attempts to reach the examiner by telephone are

unsuccessful, the examiner's supervisor, Hezron E. Williams can be reached on (571) 272-2208. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

9. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

dar
22 May 2007

HEZRON WILLIAMS
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